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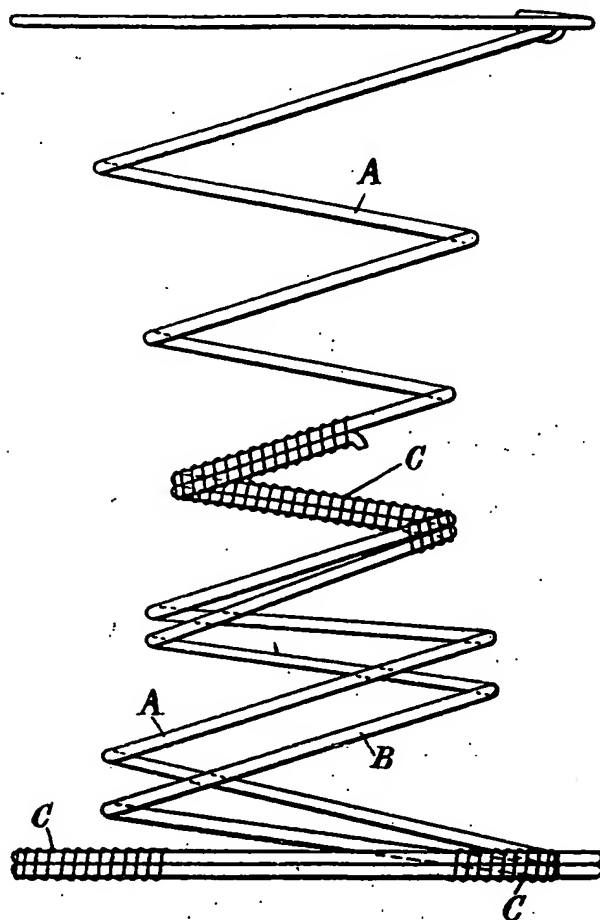
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A.D. 1910. SEP. 3. N: 26,583.  
MARSHALL'S COMPLETE SPECIFICATION.

5. BEDS,  
and Bottoms of Springs.

*Spools, Forms*

Fig. 1.



[This Drawing is a reproduction of the Original on a reduced scale.]

*Wm. Marshall*  
*Pat. Comm.*



Pat. 2,058,311

By 20583.

1910

20583

5. BEDS,  
Bed Bottoms of Springs

(1 SHEET)

Fig. 2.

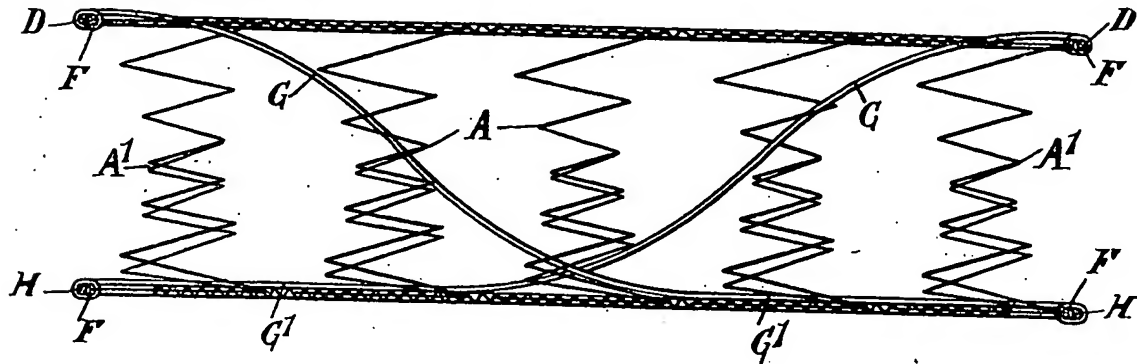
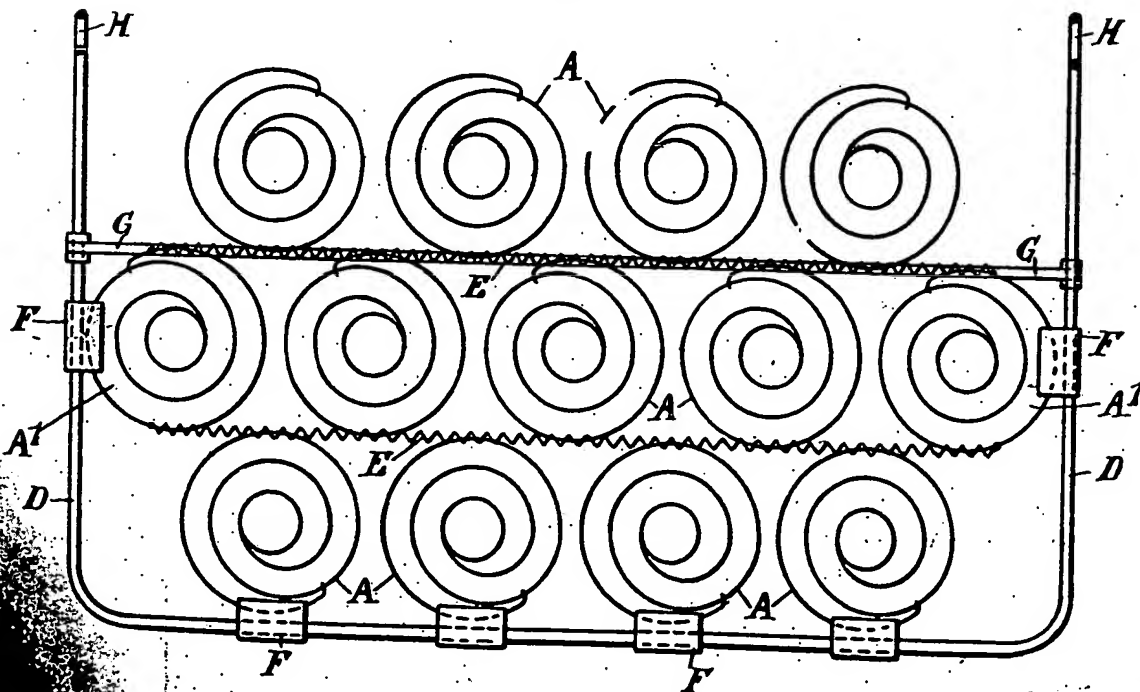


Fig. 3.



5. BEDS,  
Bed Bottoms of Springs.

N<sup>o</sup> 20,583



A.D. 1910

Date of Application, 3rd Sept., 1910

Complete Specification Left, 24th Dec., 1910—Accepted, 15th June, 1911

PROVISIONAL SPECIFICATION.

Improvements in or relating to Spring Seating Surfaces, Mattresses,  
or the like.

I, JOHN EDMUND MARSHALL, of Ellerslie House, Derby Road, Sandiacre, in the County of Derby, Manufacturer, do hereby declare the nature of this invention to be as follows:—

This invention relates to improvements in spring seating surfaces, mattresses, or the like, and its object is to obtain practically the same result with a single tier of springs, as that now obtained by employing a double tier.

According to this invention, the helical springs are so constructed that the lower part of each is reinforced making it much stronger than the upper part, and the latter portion may thus be made flexible enough to provide a resilient and comfortable seating surface, and the lower part strong enough to absorb abnormal stresses or shocks, without being damaged.

The lower part of each spring is reinforced or strengthened by means of one or more shorter supplementary springs, which are of precisely the same form as and are secured close up to the main spring, preferably by binding them with wire. The supplementary springs may be carried up the main spring to any suitable height, and when more than one is employed, they may be carried to different heights, so as to form a more perfectly graduated spring.

The binding wire is preferably first coiled into the form of an helix of the requisite diameter, and after placing the main and supplementary springs together, the helix is threaded over the coils of the main and supplementary spring or springs from the lower end, and is subsequently secured in position.

Springs can in this way be provided with extremely flexible upper parts, which give a very resilient seating surface, and with lower parts which are strong enough to resist compression to any material extent, until sufficient force is applied to thoroughly overcome the resistance of the upper parts.

When a stuffing edge is provided, the ends of the cross wires which hold the upper ends of said springs in position, are not secured to the stuffing edge as is usual, but to the top coils of the marginal springs, and said coils of the marginal springs are in turn connected by clips to the stuffing edge.

The upper wire frame which forms the stuffing edge, is in this case held out or supported say at the back and front, by means of wire stretchers. These stretchers are not however carried across the said frame as is usual, but extend from the front thereof to the back of the lower frame, and from the front of the latter, to the back of the upper frame. The stretchers described may if desired be elastic, and may be secured at an intermediate point of the lower frame, so as to form springs as well as stretchers.

This system gives the cross wires more freedom, and the action of the upper ends of the springs is not in any way cramped, as is the case when the cross wires are secured to the stuffing edge.

Dated this 2nd day of September, 1910.

H. C. SHELDON

63, Long Row, Nottingham,  
Agent for the Applicant.

[Price 8d.]

*Improvements in or relating to Spring Seating Surfaces, Mattresses, &c.*

## COMPLETE SPECIFICATION.

**Improvements in or relating to Spring Seating Surfaces, Mattresses, or the like.**

I, JOHN EDMUND MARSHALL, of Ellerslie House, Derby Road, Sandiacre, in the County of Derby, Manufacturer, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

This invention relates to improvements in spring seating surfaces, mattresses, or the like, and its object is to obtain practically the same result with a single tier of springs, as that now obtained by employing a double tier.

Referring to the drawings.

Fig. 1 is an elevation of a helical supporting spring for spring mattresses, seating surfaces or the like, reinforced or strengthened according to my invention.

Fig. 2 is a sectional elevation, and

Fig. 3 a plan showing a complete seating surface constructed according to my invention.

Fig. 1 is drawn to a larger scale than Figs. 2 and 3.

Like letters indicate like parts throughout the drawings.

According to this invention, the lower portions of the ordinary helical supporting springs which are employed in spring mattresses, seating surfaces, and the like, are reinforced, thus making the said lower portions much stronger than the upper portions.

The upper portions may thus be made flexible enough to provide a resilient and comfortable mattress or seating surface, and the lower portions strong enough to absorb abnormal stresses or shocks, without being damaged.

The springs A described, (see Fig. 1.) are each reinforced or strengthened, by means of one or more shorter supplementary springs B, which are of the same form as and are attached to the lower portions of the main spring A. The coils of the supplementary spring B follow those of the said spring A, and may be carried up to any desired point on the latter, and when more than one is employed, they may be carried to different points, so as to form a more perfectly graduated spring.

The supplementary spring B, is connected to the main spring A, preferably by binding wire C round the two. The binding wire C may be carried along the full length of the supplementary spring B, or it may be applied only at the upper and lower ends of the supplementary spring A as shown. In the former case the coils of the two springs are made so that they lie close together, in the latter case the coils need not touch except when they are bound together, and the friction between them is thus reduced to a minimum.

The main springs A can with this system be formed of extremely flexible wire, and the upper portions will give the mattress or seating surface great resiliency, whilst the lower reinforced portions can be made strong enough to resist compression to any material extent, until sufficient force is applied to thoroughly overcome the resistance of the upper portions, when they will take the weight.

When a wire frame D is employed to form a stuffing edge in a seating surface or mattress, (see Figs. 2 and 3) the ends of the cross wires E which connect the upper coils of the main springs A together, may be secured to the frame D as is usual, or they may be secured to and finish at the upper coils of the end springs A<sup>1</sup> of each alternate row, said coils being themselves directly connected to the frame D by clips F as shown in Fig. 3.

*Improvements in or relating to Spring Seating Surfaces, Mattresses, &c.*

The wire stuffing edge frame D is held out or supported say at the back and front, by means of wire stretchers G. These stretchers G extend from the front of the said frame D to the back of the lower foundation frame H, and from the front of the latter H, to the back of the frame D in a well known manner. The stretchers G described may if desired be elastic, and may be secured at intermediate points G<sup>1</sup> (see Fig. 2.) to the lower foundation frame H, so as to form springs as well as stretchers.

The system described gives the cross wires E more freedom, and the action of the upper ends of the springs A is not in any way cramped, as is the case when the wires E are secured to the wire frame D forming the stuffing edge. The stretchers G when arranged as described, hold the frame D in the correct position more perfectly.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:—

1. In a spring seating surface, mattress, or the like, a helical supporting spring such as A reinforced by means of a shorter helical supplementary spring or springs B attached thereto substantially as described.
2. A spring seating surface made up of a series of supporting springs A reinforced by supplementary springs B according to Claim 1.
3. In a spring seating surface made up of a series of reinforced supporting springs A according to Claim 2, connecting the upper coils of said springs A together by means of a series of cross wires E, and connecting the upper coils of the end springs A<sup>1</sup> in each alternate row to which the ends of said wires are secured, to the frame D by means of clips F, substantially as described.
4. The combination and arrangement of parts constituting the complete seating surface or mattress substantially as described and illustrated in the accompanying drawings.

Dated this 23rd day of December, 1910.

H. C. SHELDON,  
63, Long Row, Nottingham,  
Agent for the Applicant.